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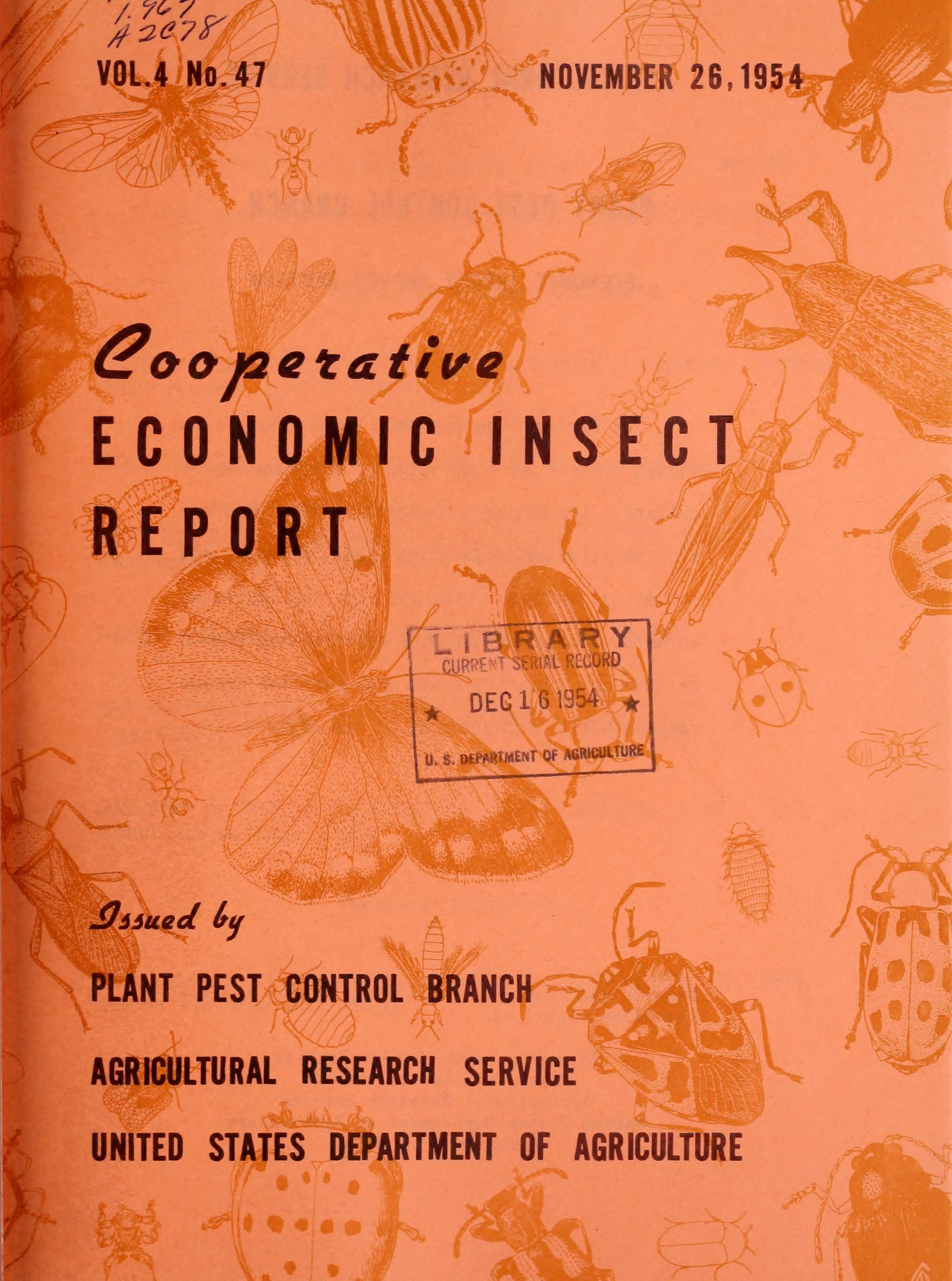

Cooperative
ECONOMIC INSECT REPORT

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U. S. DEPARTMENT OF AGRICULTURE

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PLANT PEST CONTROL BRANCH

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL BRANCH

ECONOMIC INSECT SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

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Economic Insect Survey Section
Plant Pest Control Branch
Agricultural Research Service
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Volume 4 November 26, 1954 No. 47

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

LESSER CORNSTALK BORER severe on corn in Boynton, Florida. Other reports. (pages 1023 and 1025).

BOLL WEEVIL hibernation survey in South Carolina. (page 1028).

PINK BOLLWORM gin trash inspection results from Arkansas, Oklahoma and other areas. (page 1028).

PESTS collected from deer in Oklahoma. (page 1029).

IPS BEETLES heavy and widespread on pines in east Texas. (page 1031).

Summary of INSECT CONDITIONS - 1954 - Indiana. (page 1032), North Dakota (page 1037).

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Reports in this issue are for the week ending November 19, 1954, unless otherwise designated.

WEATHER FOR THE WEEK ENDING NOVEMBER 22, 1954

Last week's temperatures, averaging above normal everywhere except in the California Central Valley where they were slightly below, were unusually mild for the season in the northern two-thirds of the Country where weekly averages generally were 10 degrees or more above normal and as much as 17 degrees above at a few stations in Montana. East of the Continental Divide the mildest temperatures occurred during the early part of the week when maxima rose into the 70's from Pennsylvania to South Dakota--Huron, South Dakota 70 and Keosauqua and Oskaloosa, Iowa 74° on the 16th, Chicago 70, Cleveland 72, and Pittsburg 71 on 17th. In the northern Rocky Mountain States, however, highest maximum temperatures occurred at the end of the period reaching 72° at Cody, Wyoming and 70° at Havre, Montana near the Canadian Border. At the close of the period from the Mississippi Valley eastward general precipitation followed by cooler air from the north and west reduced temperatures to below normal in the extreme south and near normal levels elsewhere. An interesting reversal of the normal distribution of temperatures occurred at this time when minimum temperatures in the South were as low or lower than in the North. A good example of this occurred on the 22nd when minimum temperature at Alma, Georgia, a short distance above Jacksonville, Florida, was 30° while Sault Ste. Marie, Michigan and Caribou, Maine reported 32 and 34 degrees, respectively.

The week's precipitation totalled over one-half inch in the Central Mississippi Valley, most of the South, the Atlantic Coastal States, Michigan, and a few sections along the western slopes of the Northern Rockies, most of central and northern California and western part of Washington and Oregon. Arizona and nearly all of the Great Plains received very little or none for the second consecutive week. In the lower Mississippi Valley and the southeast general, light to moderate rains at beginning of the period and again over the weekend greatly improved top soil moisture thereby benefitting fall-planted crops and pastures. Except in the Florida peninsula, more rain is still needed, however, to restore subsoil moisture and replenish water supplies

(Weather continued on page).

CEREAL AND FORAGE INSECTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - FLORIDA - Noted on lupine at Gainesville. (Kuitert). Also on lupine at Quincy. (Rhoades, Webb). Severe on corn in Boynton area. Forty percent of stand infested in some plantings. Several hundred acres involved. Some crucifer plantings infested in Belle Glade area, also corn and peppers. (Genung, Thames, Questel). GEORGIA - Small larvae killing seedlings in experimental lupine in Tift County, Nov. 3. (Beck).

CHINCH BUG (Blissus leucopterus) - OKLAHOMA - Survey at Stillwater, Payne County, made near sorghum gave average of 369 per square foot in little blue stem. (Fenton).

FALL ARMYWORM (Laphygma frugiperda) - CALIFORNIA - Approximately 50 percent of corn crop damaged in Riverside County during October. (Cal. Coop. Ins. Rept.).

SUGARCANE BORER (Diatraea saccharalis) - FLORIDA - Lighter infestation on sugarcane than last year in Everglades area. (Genung, Thames, Questel).

A GRAIN MITE (Penthaleus major) - TEXAS - Medium widespread infestation on oats in Falls County. Several fields showed typical silvered leaves. (Atkins).

BROWN WHEAT MITE (Petrobia latens) - TEXAS - Abundant for time of year in Lipscomb County. Found in most volunteer fields of rank growth. (Daniels).

GREENBUG (Toxoptera graminum) - TEXAS - Found in extremely small numbers in 8 fields in Randall, Deaf Smith, Swisher, Brisco and Floyd Counties. (Daniels). FLORIDA - Increasing on many grasses in the Everglades area; however, the parasite, Aphidius testaceipes, beginning to affect the aphids. (Genung, Thames, Questel).

YELLOW SUGARCANE APHID (Sipha flava) - FLORIDA - Increasing on pangola grass in Everglades area. (Genung, Thames, Questel).

RHODES GRASS SCALE (*Antonina graminis*) - FLORIDA - Severe injury to St. Augustine grass at Pensacola, Escambia County where this pest reported for the first time. (Jackson). Adults averaged 75 per square foot and severe infestations found on Bermuda grass at Hollywood. (Link).

COWPEA APHID (*Aphis medicaginis*) - FLORIDA - Average of several per plant infesting 80-acre lupine field at Live Oak, Suwannee County. Det. Tissot. (Ritchey).

LUPINE MAGGOT (*Hylemya lupini*) - FLORIDA - Average of 3-5 adults per square yard on lupine at Gainesville, Alachua County. Adults first observed Nov. 8. (Kuitert). Eggs and larvae infesting lupine at Quincy. (Rhoades, Webb).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - TEXAS - Medium heavy local infestation on alfalfa and clover in Brazos County. (Fuller, Randolph, Davis).

YELLOW CLOVER APHID (*Myzocallis trifolii*) - CALIFORNIA - Heavy infestations in alfalfa in Borrego Valley, San Diego County during October. (Cal. Coop. Ins. Rept.).

ALFALFA LOOPER (*Autographa californica*) - CALIFORNIA - Heavy infestations in alfalfa in Stanislaus County during October. Medium in Imperial County. (Cal. Coop. Ins. Rept.).

LEAF MINERS - CALIFORNIA - Heavy damage to alfalfa in parts of Riverside County during October. (Cal. Coop. Ins. Rept.).

ARMYWORM (*Pseudaletia unipuncta*) - ARKANSAS - Total of 102 adults taken in light trap at Stuttgart November 16-17. (Warren). - TENNESSEE - A few adults being taken at light traps in Knoxville. (Mullett).

FRUIT INSECTS

ORCHARD MITES - CALIFORNIA - *Brevipalpus lewisi* caused fruit scarring in Kern County tangerine orchards. *Metatetranychus ulmi* was medium to severe on 25,000 acres of prunes and 5,000 acres of pears in Santa Clara County. Also caused some defoliation of pears in Sacramento County. Tetranychus bimaculatus also medium to severe in 25,000 acres of prunes in Santa Clara County. (Cal. Coop. Ins. Rept., Oct.).

GREENHOUSE THRIPS (Heliothrips haemorrhoidalis) - FLORIDA - Heavy infestations of nymphs and adults on avocado fruit in Dade County. (Wolfenbarger).

BLACK SCALE (Saissetia oleae) - TEXAS - Heavy widespread infestation on figs in Val Verde County. Identified by V. A. Little. (Fuller).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Light to heavy in walnut orchards in San Bernardino County during October. (Cal. Coop. Ins. Rept.).

NAVEL ORANGEWORM (Myelois venipars) - CALIFORNIA - Damage as high as 11 percent to walnut crop in Tehama County during Oct. (Cal. Coop. Ins. Rept.).

PECAN WEEVIL (Curculio caryae) - GEORGIA - Many nuts of Mobile variety ruined on trees at Fort Valley, Oct. 22. (Snapp.).

TRUCK CROP INSECTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - CALIFORNIA - Severe damage to beans in Coachella Valley, Riverside County during October. (Cal. Coop. Ins. Rept.). GEORGIA - Moderate tunneling damage to 20 acres of sweetpotatoes in Mitchell County, Oct. 22. (Crownover, Jones).

BANDED CUCUMBER BEETLE (Diabrotica balteata) - FLORIDA - Considerable injury to beans in gardens and experimental plantings in the Belle Glade area. (Genung, Thames, Questel).

COWPEA CURCULIO (Chalcodermus aeneus) - TEXAS - Medium to heavy widespread infestation on peas in Rio Grande Valley. (Griffith).

CORN EARWORM (Heliothis armigera) - TEXAS - Light to medium widespread in Rio Grande Valley. Infesting lettuce, cabbage and broccoli. Larvae found in heads making control very difficult. (Griffith). Medium local infestation on spinach in Zavala County. Contamination stopped processing for a few days. Some garden webworm also involved. (Richardson).

CABBAGE LOOPER (Trichoplusia ni) - TEXAS - Light to heavy widespread on lettuce, cabbage and broccoli in Rio Grande Valley. (Griffith).

CABBAGE APHID (Brevicoryne brassicae) - FLORIDA - Nymphs and adults on cabbage at Sanford, Seminole County. In 7 fields, 1,400 plants were examined with 0.6 plants per 100 infested. Severe damage to plantings of garden crucifers in the Everglades area. (Wilson, Genung, Thames, Questel).

CABBAGE WEBWORM (Hellula rogatalis) - FLORIDA - Larvae infesting cabbage at Sanford, Seminole County. Of 7 fields examined, only one was infested and this at the rate of 3.5 percent of plants examined. (Wilson). Infesting about 25 percent of cauliflower plants near Belle Glade. (Genung, Thames, Questel).

TURNIP APHID (Rhopalosiphum pseudobrassicae) - FLORIDA - Severely damaging garden crucifers in the Everglades area. (Genung, Thames, Questel).

POTATO TUBERWORM (Gnorimoschema operculella) - UTAH - Infested most tubers not well-covered with soil in fields at Enterprise and Beryl. Infestations of harvested commercial potatoes in cellars varied from light to moderately severe. (Knowlton).

LEAF MINERS (Liriomyza sp.) - TEXAS - Medium to heavy widespread infestation on peppers and tomatoes in Rio Grande Valley. (Griffith).

PEPPER WEEVIL (Anthonomus eugenii) - TEXAS - Medium widesprea infestation on bell peppers in Rio Grande Valley. No damage where control used. (Griffith).

A LOOPER - TEXAS - Heavy local infestation attacking carrots in Dimmit County. Larvae and pupae on tops. (Richardson).

SWEETPOTATO LEAF BEETLE (Typophorus viridicyaneus) - GEORGIA - Larvae did considerable tunneling damage prior to harvest in 6 acres of sweetpotatoes in Worth County, Oct. 12. (Blackwell).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - SOUTH CAROLINA - Being found again in some areas of Charleston County. (Livingston).

SEED-CORN MAGGOT (Hylemya cilicrura) - TEXAS - Light local infestation on spinach in Zavala County. Untreated spinach being damaged. (Richardson).

BEET LEAFHOPPER (Circulifer tenellus) - TEXAS - Light local infestation on spinach in Zavala County. (Richardson).

A WHITEFLY - CALIFORNIA - Heavy damage to boysenberry plants in Stanislaus County during October. (Cal. Coop. Ins. Rept.).

A BEETLE (Hoplia sp.) - CALIFORNIA - Damage from medium to heavy to strawberry plants in Santa Barbara County during October. (Cal. Coop. Ins. Rept.).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - ARKANSAS - Tanglefoot traps in Hempstead County for boll weevil collection produced no weevils prior to November 1. From November 1 to 15, 82 adults were collected from 2 of 11 traps. (Warren).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Severe on wild cotton in the Superstition Mountains November 14. (Ariz. Coop. Rept.).

ALFALFA LOOPER (Autographa californica) - CALIFORNIA - Serious damage to cotton in parts of Kern County during October. (Cal. Coop. Ins. Rept.).

Boll Weevil Hibernation Survey - SOUTH CAROLINA - During the first two weeks of November 1954, 200 square yards of surface woods trash were examined from 20 farms in Florence County. These examinations showed live boll weevils (Anthonomus grandis) to be present at various rates per farm ranging from zero to 11,132 per acre. An average of 2,299 live weevils per acre was found in the 1954 fall examinations. This compares with an average of 3,538 per acre found in the fall of 1953. Only in two other years (1943 and 1951) were fewer weevils found in the fall examinations since these studies were started in 1942. During the 12-year period examinations made in the fall have disclosed the presence of weevils at average rates ranging from 1,573 to 10,744 per acre. The average for Florence County for the 12-year period is 4,355 per acre. Examinations made on six farms in Darlington County showed live boll weevils at various rates per farm ranging from zero to 4,840 with an average of 2,097 per acre. These fall examination records bear out late summer field observations which showed that a heavy build-up of the late summer broods of the boll weevil had been largely prevented due to considerable climatic control throughout the season. The following records were made on other insects found in surface woods trash during the Florence County examinations. Fuller rose beetle (Pantomorus godmani) was found in trash collected from 12 farms out of 20 from which collections were made. Counts ranged from 484 to 31,944 per acre with average of 4,921 per acre for the 12 farms. Bean leaf beetle (Cerotoma trifurcata) was found in surface woods trash from two farms only, at rates of 484 and 968 per acre. Lady beetles were found in trash from three farms at rates of 484, 484, and 968 per acre. Spotted cucumber beetle (Diabrotica undecimpunctata howardi) was found in trash from two farms at rates of 484 and 968 per acre. No other insects of economic importance were found in the examinations. These trash examinations have been rather unusual in the faunal populations have been very limited and light. Perhaps this is to be expected as a result of the extreme drought conditions occurring during the summer months. (Walker).

PINK BOLLWORM (Pectinophora gossypiella) - Final totals show 605 bushels of gin trash inspected from 7 southeast MISSOURI counties with negative results. The season's total in ARKANSAS is 3, 817 bushels of trash inspected, representing 56 counties, total of 19 pink bollworms found - these originated from 9 counties, 6 in old regulated areas and 3 (Clark, Logan and Yell) outside. The inspection in OKLA. covered 51 counties and pink bollworm was found in 41. In 15 of the 41 counties the pest was found for the first time although the counties were already under regulation. Average for the State shows that the pink bollworm was found at rate of . 409 per bushel this season compared with .021 in 1953 and . 111 in 1952. Specimens from the new counties were sent for confirmation, but the results for all the counties have not been received to Nov. 16. Gin trash inspection has been completed for the season in these three states. In west TEXAS, where all tabulations not completed, greater number of counties show increase over 1953 in pink bollworms per bushel. In El Paso Valley, Hudspeth County shows average of 6 pink bollworms per bushel this year compared with 2. 50 in 1953 and 25 in 1952. The Juarez Valley, MEXICO, including Villa Ahumada, shows average of 853 pink bollworms per bushel this year compared to 503 in 1953 and 336 in 1952. El Paso County, TEXAS, shows average of 9. 71 per bushel this year compared with 2. 71 in 1953 and 7. 52 in 1952. Dona Ana County, NEW MEXICO, shows 2. 53 this year compared with . 67 in 1953 and . 21 in 1952. In both Dona Ana and El Paso Counties inspection still in progress. (PBW Cont. Proj., Nov. 1-15).

INSECTS AFFECTING MAN & ANIMALS

Pests Collected from Deer in Oklahoma: An examination of 120 deer from all parts of Oklahoma during the recent hunting season indicated that only TICKS were present on all deer. Species found in order of prevalence were *Ixodes ricinus scapularis*, *Dermacentor albipictus*, and *Amblyomma americanum*. Small numbers of LOUSE FLIES and MALLOPHAGA were found. (Howell).

CATTLE LICE - UTAH - Becoming injuriously abundant in herds throughout Utah. (Knowlton).

MISCELLANEOUS INSECTS

BOXELDER BUG (*Leptocoris trivittatus*) - MARYLAND - Continues to annoy householders in Carroll, Baltimore, Prince Georges and Somerset Counties. (U. Md., Ent. Dept.).

SPRINGTAILS - TENNESSEE - Large numbers being found locally in eastern area. (Mullett).

BENEFICIAL INSECTS

HONEY BEES - TEXAS - According to the last "Report of Apiary Inspection in Texas", 49,067 colonies were inspected during the year beginning September 1, 1953, and ending August 31, 1954. These bees were distributed through 88 counties, were owned by 773 beekeepers, and 615 colonies or 1.25 percent were found infected with American foulbrood. Positive samples of parafoulbrood were diagnosed brom Brazos and Hunt Counties. A sample of brood affected with a fungus, Aspergillus flavus, was sent in from Hidalgo County. European foulbrood, sacbrood, and Nosema were not important. (Burgin).

RECENT IMPORTANT INTERCEPTIONS AT PORTS OF ENTRY

A living larva of the so-called vine moth, Polychrosis botrana (Schiff.), (Olethreutidae) was intercepted recently in grapes from France in airplane stores at Boston, Massachusetts. (Crump, Lantz). This insect is considered a very serious enemy of the grape in parts of Europe and Asia. It has been the subject of intensive entomological research in the Old World for over 60 years and much has been written regarding its injury, life history and habits. Injury to the grape is caused by the larvae feeding on the blossoms and the fruit. Losses as high as 25-40 percent of the crop have been reported. Observations on its life history indicate the vine moth hibernates in the pupal stage in cracks in the bark of the vines or on the ground. There are usually three generations a year. Moths from overwintering pupae deposit eggs on the flower buds. The first generation larvae feed on the blossom clusters and the young fruit. Larvae of the second generation attack the developing grapes and larvae of the third, the most destructive generation, attack the ripening grapes. In some regions a fourth generation develops. Varieties with heavy foliage and closely bunched grapes are said to be more severely injured. The vine moth is said to occur in France, Spain, Algeria, Italy, Yugoslavia, Transcaucasia, Hungary, Greece, Portugal, Luxembourg, Germany Switzerland, Palestine and Syria. It is not known to occur in the United States. (Compiled by - Plant Quarantine Branch).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

IPS BEETLES - TEXAS - Heavy widespread infestation causing mortality on pines throughout East Texas. Most serious in area burned by wildfire during summer and fall. Worst damage in Angelina, Jasper, Nacogdoches, Newton, Trinity and San Augustine Counties. (Young). FLORIDA - Average of 15 adults per plant on longleaf pines at Bratt, Escambia County. (Smith).

TURPENTINE BEETLES - TEXAS - Heavy infestation causing mortality to pines in Nacogdoches and Liberty Counties. (Young).

A FALSE SPIDER MITE (Tenuipalpus anoplus) - FLORIDA - Averaging hundreds per tree on mahogany trees at Coral Gables, Dade County. Bronzing leaves. Many roadside trees affected in South Miami. (DeLeon).

STORED-PRODUCT INSECTS

STORED-GRAIN INSECTS - WASHINGTON - Still in small numbers in Palouse area of Washington. High moisture wheat and mild weather are producing very favorable conditions for population increase. Red flour beetle (Tribolium castaneum) and saw-toothed grain beetle (Oryzaephilus surinamensis) are the most common at the present time. (Walker).

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Weather Continued

which are still very low in most of South Carolina. The second consecutive warm dry week contributed to the further decline of fall crops in the lower Great Plains and depleted soil moisture in the upper Great Plains and Minnesota to the extent that more rain is now needed before the winter freeze-up. (Summary Supplied by U. S. Weather Bureau).

SUMMARY OF INSECT CONDITIONS - 1954

INDIANA

Reported by J. J. Davis

The weather for 1954 provided extremes of temperatures and rainfall which had a marked effect on the abundance of many economic species of insects. For example, cool weather in the spring was responsible for armyworm outbreaks, while dry weather later in the season indirectly affected damage by grasshoppers, webworms, and others.

Field Crop Insects

ARMY WORMS (Pseudaletia unipuncta) were again very abundant. They were exceptionally abundant in 1953 and it is unusual to have armyworm outbreaks two years in succession. The 1954 outbreak can be attributed to cool spring weather, the same as in 1953, which permitted development of the insects but was too cool to permit normal parasite development. First reports were from southern Indiana early in May. At that time, most of the larvae were small. Continuing into June damaging infestations developed throughout the State to the Michigan border. In many rye and wheat fields 50 percent of the heads were cut off. Thousands of acres of pasture were cleaned of vegetation and it was sometimes difficult to find pasturage for feeder cattle. In many cases, migration from harvested grain fields resulted in heavy infestations in corn. By the middle of June many reports were coming in from northern Indiana and several county agents reported 30 to 50 percent of wheat destroyed. With the more general use of the newer insecticides and adequate ground and aerial equipment for application, at least $3,000,000 of crops were saved.

VARIEGATED CUTWORM (Peridroma margaritosa) appeared in unprecedented numbers, especially in southern Indiana, the last half of May and into June. The insects were especially abundant on alfalfa and because of their climbing habit they were frequently mistaken for armyworms. By early June, they were migrating into and damaging various adjoining crops. As far as known, this cutworm was more abundant on field crops than during the past forty years. During the latter part of August it was serious on tomato fruits.

BLACK CUT WORMS (*Agrotis ypsilon*) were abundant in low spots in corn fields in many scattered places, but not as severe as in 1953. The latter part of June moths were exceptionally abundant and caused annoyance in homes. GRASSHOPPERS (principally *Melanoplus femur-rubrum*) began appearing in threatening numbers last of June. All kinds of vegetation were attacked, especially corn and legumes. The infestation was less in southern Indiana where the heaviest populations occurred in 1953, but northward, especially from Indianapolis north,there occurred very heavy populations, heavier than for 15 or 20 years. Sprays with low pressure ground sprayers and airplanes proved very effective and profitable. CHINCH BUG (*Blissus leucopterus*) was abundant in hibernating quarters in eastern and western counties, north of Lafayette, Williamsport, and Richmond, in April. They were migrating into corn the latter part of June. Farmers had advance advice regarding controls and did an excellent job of preventing what otherwise may have been large losses.

E. CORN BORER (*Pyrausta nubilalis*) wintered over in somewhat larger numbers than the winter before. First moths appeared at Orleans May 23 and at Lafayette June 7. The more or less universal planting of corn after the recommended date prevented heavy infestations. Damage for 1954 will not be serious. SOD WEBWORM (*Crambus spp.*) caused extensive damage to corn in several areas early in June. GARDEN WEBWORM (*Loxostege similalis*) became very destructive to alfalfa in southern Indiana early in August. SEED-CORN BEETLE (*Agonoderus lecontei*) was abundant in a number of localities the last of May and first of June, but apparently was not doing much damage. ENGLISH GRAIN APHID (*Macrosiphum granarium*) was reported abundant in heads of wheat from many places, but no appreciable damage found. STALK BORER (*Papaipema nebris*) was common throughout State, especially central area, during June, attacking wheat, corn, and certain vegetable crops. WHEAT STEM MAGGOT (*Meromyza americana*) caused much loss to a large field of blue grass grown for seed. FLEA BEETLES (principally *Chaetocnema pulicaria* and *Epitrix cucumeris*) were abundant generally on corn and potatoes. Stewart's disease followed infestations on corn.

VETCH BRUCHID (*Bruchus brachialis*) heavily infested vetch seed in several south central areas. ALFALFA CATERPILLAR (*Colias philodice eurytheme*) was abundant in many alfalfa fields. CLOVER LEAF WEEVIL (*Hypera punctata*) was normally abundant in April and in some localities did noticeable damage. LESSER CLOVER LEAF WEEVIL (*Hypera nigrirostris*) was common, infestations being rather general and in some cases 95 percent of buds showed damage. The infestations occurred largely in northern Indiana and damage was largely to the first crop of clover. PEA APHID (*Macrosiphum pisi*) built up to destructive numbers on alfalfa early in the season (April). ALFALFA PLANT BUG (*Adelphocoris lineolatus*) was conspicuously abundant at lights at Lafayette June 23. MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) began hatching at Lafayette April 9. Cool weather in May kept development low on plants. Adults appeared in southern Indiana last of May, at Lafayette June 3 and were abundant in northern Indiana June 11. In general, more spraying was done and with excellent results.

CLOVER ROOT BORER (*Hylastinus obscurus*) was severe in some fields in northern Indiana, and in isolated fields the crop was completely destroyed. BLISTER BEETLES (*Epicauta* spp.) were generally abundant and destructive throughout the State. It might be noted that in Davies County soybeans were defoliated in areas where grasshoppers had been abundant the past few years. GREEN JUNE BEETLE (*Cotinis nitida*) grubs were abundant in the spring throughout the southern area, from Indianapolis south. POTATO LEAFHOPPER (*Empoasca fabae*) has been especially abundant on alfalfa, snap beans and potatoes in the northern half of the state. GREEN CLOVERWORM (*Plathypena scabra*) was abundant on soybeans and alfalfa in scattered locations. An annual WHITE GRUB (*Cyclocephala* sp.) has been very abundant and destructive to lawns this fall in northwestern Indiana.

Vegetable Insects

SQUASH BUG (*Anasa tristis*) built up to very large populations throughout the State by late August and early September, and has been responsible for heavy losses, especially in commercial plantings of squash and pumpkins. In Jackson County, for example, 20 percent of the canning pumpkin acreage was disked up because of this insect and another 20 percent was a total loss.

RHUBARB CURCULIO (Lixus concavus) was damaging to rhubarb in many cases throughout the state. ONION THRIPS (Thrips tabaci) were very severe on untreated onions. BEAN LEAF BEETLE (Cerotoma trifurcata) caused considerable injury to soybeans in southern Indiana during the latter part of the season. In the truck garden area near Indianapolis, this species caused serious damage to pods and foliage of green beans and was especially serious adjacent to maturing soybeans. Early in the season, it was a pest of garden beans generally.

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) was abundant and injured pods of green beans and rind of squash early in September. CORN EARWORM (Heliothis armigera) adults first appeared at lights in Posey County May 25. It was a pest of corn over State and in commercial, as well as home plantings of tomatoes, it was a real problem. In tomatoes it became especially serious and many commercial canning tomato plantings were abandoned. Also damaged peppers, beans, and other vegetable crops late in the season. TOMATO HORNWORM (Protoparce sexta) was very abundant, especially in central Indiana, late in the season. TOMATO RUSSET MITE (Vasates lycopersici) became a serious pest throughout Indiana, especially over canning tomato area. This mite apparently does not winter over in Indiana. IMPORTED CABBAGE WORM (Pieris rapae) and CABBAGE LOOPER (Trichoplusia ni) were serious pests of cabbage and related crops late in the season.

Fruit Insects

CHERRY FRUIT FLY (Rhagoletis cingulata) was more abundant and widespread in northern Indiana than for several years. RASPBERRY CANE BORER (Oberea bimaculata) was reported from many areas, although it is not a serious problem.

Insects of Shade Trees and Ornamentals

COTTONY MAPLE SCALE (Pulvinaria innumerablis) was very abundant in northern Indiana. FORBES SCALE (Aspidiotus forbesi) and PUTNAM SCALE (A. ancylus) were rather common on shade trees in the Indianapolis area.

JUNIPER WEBWORM (*Dichomeris marginella*) was very destructive to ornamental juniper plantings in many localities. SAWFLIES are becoming major problems on pine plantings. Most serious is the European pine sawfly (*Neodiprion sertifer*) which occurs in the northern half of the State and is especially destructive to Christmas tree plantings. *N. banksianae* was common on Jack pine in the Indianapolis area and *N. americanus* __________) was common on short leaf pine plantings in southern Indiana. EUROPEAN PINE SHOOT MOTH (*Rhyacionia buoliana*) was generally abundant in northern area, especially on red pine in Christmas tree and reforestation plantings.

ELM LEAF BEETLE (*Galerucella xanthomelaena*) was more generally abundant than for many years. BAG WORMS (*Thyridopteryx ephemeraeformis*), which were scarce in 1951 following years of abundance, are again building up to conspicuous and destructive numbers. BLACK VINE WEEVIL (*Brachyrhinus sulcatus*) is becoming an increasingly important pest on *Taxus*. BRONZE BIRCH BORER (*Agrilus anxius*) reported more frequently than usual. This may be partly explained by the unusually dry years of 1953 and 1954. FLAT-HEADED APPLE TREE BORER (*Chrysobothris femorata*) was usually destructive. Perhaps a major cause was the dry seasons of 1953 and 1954.

Household and Miscellaneous Pests

LITTLE HOUSE FLY (*Fannia canicularis*) was exceptionally abundant around poultry establishments in several sections. AMERICAN DOG TICK(*Dermacentor variabilis*) was commonly reported during May and June, and severe infestations of BROWN DOG TICK (*Rhipicephalus sanguineus*) were reported from a number of localities during August and September. CHIGGERS (*Eutrombicula alfreddugesi*) were abundant in lawns. A damp-wood TERMITE (*Zootermopsis angusticollis*) was found in a consignment of lumber at South Bend, shipped from Broadbent, Oregon. Although the damage was not great, T. E. Snyder advises that this termite possibly could become established in Indiana, and might become a serious problem. VINEGAR FLIES (*Drosophila melanogaster*) were a serious problem in tomato canning plants, heavy infestations developing in the field because of the cracking of tomatoes before being picked.

CLOVER MITE (Bryobia praetiosa) was again a serious annoying pest in homes, especially during April. BOXELDER BUG (Leptocoris trivittatus) continues as an annoying pest of first importance. BLACK WIDOW SPIDERS (Latrodectus mactans) were reported unusually abundant in several southern localities and HACKBERRY NIPPLE GALL (Pachypsylla celtidis-mamma) were again conspicuous annoyance in homes.

SUMMARY OF INSECT CONDITIONS - 1954

NORTH DAKOTA

Reported by W. J. Colberg

Weather conditions generally favored good crop growth. Moisture was adequate until mid-July. A brief hot and dry period during late July which continued into early August caused considerable crop damage in many areas. Insect problems throughout the State were no threat to crops at any time, consequently, there was little need for control.

Cereal and Forage Insects

WIREWORMS which were considered a threat to small grains, potatoes, and corn, especially in the northwestern and northern Red River Valley counties, caused little crop injury. Farmers throughout the infested area did a considerable amount of seed treatment as a protective measure. Potato growers used a strip treatment alone or in combination with fertilizers. Only a few grain fields throughout the area were destroyed by the pests. WHEAT STEM SAWFLY (Cephus cinctus) continues a major pest of wheat in the northwestern area. Adults appeared just a day or two later than usual. The infestation based upon limited field observations indicates that a slight increase in crop losses can be expected, possibly up to 10 percent. The ARMYWORM (Pseudaletia unipuncta) reached economic status for a short period during mid-July. The infestation was most severe in the Red River Valley counties and in parts of four southwestern counties which had been severely hailed out in mid-June. Over 100,000 acres of grain were treated by airplane for the control of this pest. In many instances the treatment was unnecessary. Only a few fields in the extreme northeastern counties were severely damaged.

EUROPEAN CORN BORER (Pyrausta nubilalis) was expected to be slightly worse in southeastern counties. Infestation of tassels in early-planted corn was extremely heavy; however, no serious damage to corn occurred. Egg laying which extended over a long period during first and second generation was expected to make the problem more serious. Second generation, however, was of little importance. Losses from corn borer during 1954 are expected to be slightly greater, not in severity but in total dollars lost due to the increased corn acreage. SWEETCLOVER WEEVIL (Sitona cylindricollis) caused some concern during early spring. Primary worry was in newly-seeded sweetclover. The infestation of weevils necessitated only a few hundred acres of treatment. LYGUS BUGS were numerous in alfalfa somewhat later than usual with no actual damage reported. GRASSHOPPERS were no problem during the season. A few light to heavy infestations were observed in sweetclover and along roadsides. These areas were in the eastern 1/3 of the State. Melanoplus femur-rubrum dominant species. Fall egg surveys revealed that southeastern and south central North Dakota may have a slight build-up during 1955.

Truck Crop Insects

COLORADO POTATO BEETLE (Leptinotarsa decemlineata), which was somewhat difficult to control during 1953, was adequately controlled this past season. The SUGARBEET ROOT MAGGOT was found in the lighter soils of Walsh County. The infestation included over 6,000 acres of beets. A few fields were completely destroyed, others had yields reduced by 2 to 4 tons per acre.

Man and Animal Insects

MOSQUITOES were a real menace to humans and livestock for a short period in July. However, after the initial outbreak, very little difficulty was experienced. FLIES generally were about the same as in past years. Control programs were somewhat more successful. CATTLE LICE during the early winter months were worse than in previous years. Mild weather aggravated the problem. However, spray operators were able to work most of the winter and several thousand head of cattle were sprayed for louse control.